

CLAIMS

1. A hybrid rake/equalizer receiver for correlating a delay spread in a spread spectrum system, comprising:

5 a plurality of adaptive equalizers, each for filtering different regions of the delay spread that have an energy level above a pre-specified threshold to respectively provide equalized-descrambled chip sequences for correlation,

wherein equalizer coefficients respectively corresponding to the plurality of adaptive equalizers are updated individually.

10 2. The hybrid rake/equalizer receiver of claim 1, further comprising a correlation module for correlating the equalized-descrambled chip sequences to a short spreading code to provide correlated outputs, for weighting the correlated outputs to produce weighted-correlated outputs, and for summing the
15 weighted-correlated outputs to produce a bit estimate of an original non-spread bit stream corresponding to the delay spread.

20 3. The hybrid rake/equalizer receiver of claim 2, wherein the correlation module weights the correlated outputs according to how much energy is respectively present in the different regions of the delay spread such that the different regions having low energy are given a lower weight than the different regions having high energy.

4. The hybrid rake/equalizer receiver of claim 2, wherein the correlation module performs trivial weighting on the correlated outputs.

5. The hybrid rake/equalizer receiver of claim 1, wherein the spread spectrum system is a Wideband Code Division Multiple Access (WCDMA) system.

6. In a spread spectrum receiver, a method for correlating a delay spread, comprising the steps of:

respectively allocating each of a plurality of adaptive equalizers to different regions in the delay spread that exceed a pre-specified threshold energy level to filter the different regions so as to provide equalized-descrambled chip sequences therefrom; and

individually updating equalizer coefficients respectively corresponding to the plurality of adaptive equalizers.

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7. The method of claim 6, further comprising the steps of:

correlating the equalized-descrambled chip sequences to a short spreading code to provide correlated outputs;

assigning weights to the correlated outputs to produce weighted-correlated outputs; and

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summing the weighted-correlated outputs to produce a bit estimate of an original non-spread bit stream corresponding to the delay spread.

8. The method of claim 7, wherein said assigning step assigns the weights to the correlated outputs according to how much energy is present in corresponding portions of the delay spread such that the corresponding portions having low energy are given a lower weight than the corresponding portions having high energy.

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9. The method of claim 7, wherein said assigning step assigns trivial weights to the correlated outputs.

10. The method of claim 6, wherein the spread spectrum receiver is a
10 Wideband Code Division Multiple Access (WCDMA) receiver.